

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An inputting device, which is disposed in an opening ~~part~~ of a cabinet surface, comprising:

~~in case that a plane being about parallel to the front surface of said cabinet is defined as an XY plane in an XY orthogonal coordinate system;~~

~~an elastic sheet that is made of a material having elasticity and flexibility or having only elasticity and is~~ having an outside surface disposed on an inside surface of said cabinet including said opening in about parallel to said XY plane in a state that the front surface of said elastic sheet faces the rear surface of the front side of said cabinet;

~~a sliding key that is fixed tightly on the outside front surface of said elastic sheet with at least a portion in said opening of said cabinet surfaceso that said sliding key is disposed at an about center of said opening part in a state that said sliding key is possible to move in an arbitrary direction on said XY plane; and~~

~~sensors that at least detect the movement in a horizontal direction that is substantially parallel to said cabinet surface, and direction of said sliding key on said XY plane.~~

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2. (currently amended): An inputting device in accordance with claim 1, wherein:

said sliding key has a rim part whose diameter is larger than that of said opening-part.

3. (currently amended): An inputting device in accordance with claim 2, wherein:

said sliding key is adhered to said elastic sheet at said rim part, and

a space is formed on a ~~part~~portion of the ~~rear~~inside surface of said cabinet at ~~the~~a position adjacent~~adjoining~~to said opening part, and

~~about the edge part of~~ at least a portion of said rim part of said sliding key is disposed in said space.

4. (original): An inputting device in accordance with claim 1, further comprising:

a first control signal generating means that generates a first control signal corresponding to at least the moved direction of said sliding key detected by said sensors, wherein:

said first control signal executes the change of the position of a subject to be controlled on a display.

5. (currently amended): An inputting device, which is disposed in an opening ~~part~~ of a cabinet surface, comprising:

~~in case that a plane being about parallel to the front surface of said cabinet is defined as an XY plane in an XY orthogonal coordinate system;~~

~~an elastic sheet that is made of a material having elasticity and flexibility or having only elasticity and is having an outside surface disposed on an inside surface of said cabinet including said opening in about parallel to said XY plane in a state that the front surface of said elastic sheet faces the rear surface of the front side of said cabinet;~~

~~a surrounding key being comprising a ring shape larger than said opening that is fixed tightly on an inside the front surface of said elastic sheet;~~

~~a sliding key that is fixed tightly on the outside front surface of said elastic sheet with at least a portion in said opening of said cabinet surfaces so that said sliding key is disposed at an about center of said opening part in a state that said sliding key is possible to move in an arbitrary direction on said XY plane;~~

~~sensors that at least detect movement in a horizontal direction that is substantially parallel to said cabinet surface the moved direction of said sliding key on said XY plane; and~~

~~switches that detect the movement in the horizontal direction of whether said surrounding key is pushed in one direction in the XY directions or not.~~

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6. (currently amended): An inputting device in accordance with claim 5, wherein:

said sliding key has a rim part whose diameter is larger than that of said opening-part.

7. (currently amended): An inputting device in accordance with claim 6, wherein:

said sliding key is adhered to said elastic sheet at said rim part;~~and~~

a space is formed on a portion part of the ~~rear~~inside surface of said cabinets~~surrounding~~
~~key;~~ and

~~about the edge part~~ at least a portion of said rim part of said sliding key is disposed in said
space.

8. (original): An inputting device in accordance with claim 5, further comprising:

a first control signal generating means that generates a first control signal corresponding
to at least the moved direction of said sliding key detected by said sensors; and

a second control signal generating means that generates a second control signal
corresponding to the pushed direction of one of the edges of said surrounding key detected by
one of said switches; wherein:

said first control signal and said second control signal execute the change of the position
of a subject to be controlled on a display.

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9. (currently amended): An inputting device in accordance with claim 1 or 5, wherein:

a magnet is disposed in said sliding key, and

said sensors detect the moved direction and the amount of the horizontal movement of said sliding key ~~on said XY plane~~ based on the change of the magnetic flux density from said magnet corresponding to the movement of said sliding key.

10. (original): An inputting device in accordance with claim 9, wherein:

said sliding key provides a concave part on a part of the surface where said sliding key is adhered to said elastic sheet, and

said sliding key is adhered to said elastic sheet by disposing said magnet in said concave part, and

said magnet is sealed in said sliding key.

11. (currently amended): An inputting device in accordance with claim 1 or 5, wherein:

guides being possible to be recognized optically are disposed on designated positions on said elastic sheet, and

said sensors detect the moved direction and the amount of the horizontal movement of said sliding key ~~on said XY plane~~ by reading the movements of said guides optically corresponding to the movement of said sliding key.

12. (currently amended): An inputting device in accordance with claim 1 or 5, wherein:

a coil is disposed in said sliding key, and

said sensors detect the moved direction and the amount of the horizontal movement of said sliding key ~~on said XY plane~~ based on the electromotive force generated by the electromagnetic induction by the movement of said sliding key in the magnetic field of designated power formed at the surrounding part of said coil.

13. (currently amended): An inputting device in accordance with claim 1 or 5, further comprising: .

a pushing component, which is made of a material that is harder than said elastic sheet and whose friction factor is smaller than that of said elastic sheet, and which is disposed on the insider~~rear~~ surface of said elastic sheet at the position corresponding to said sliding key;

a contact switch disposed adjacent to said pushing component that detects that said sliding key was pushed in a vertical direction that is substantially perpendicular to said cabinet surface~~the inside direction of said cabinet by disposing at the position facing said pushing component~~; and

a third control signal generating means that generates a third control signal when said pushing component contacts~~mades~~ said contact switch ~~work~~; wherein:

said third control signal executes the selection or the decision of information indicating by a subject to be controlled on a display.

14. (currently amended): An inputting device in accordance with claim 13, further comprising:

an ignoring means that ignores said third control signal, in case that the amount of the movement of said sliding key in said horizontal direction ~~on said XY plane~~ is larger than a predetermined ~~designated~~ value.

15. (currently amended): An inputting device in accordance with claim 13, further comprising:

a printed circuit board on which said contact switch is disposed; and

a sheet that covers said printed circuit board and ~~disposed~~ said contact switch.

16. (currently amended): An inputting device in accordance with claim 1 or 5, further comprising:

a bellows portion having a ring shape formed in said elastic sheet outside the position where said sliding key is adhered to said elastic sheet.

17. (currently amended): An inputting device in accordance with claim 1 or 5, further comprising:

at least one of projections supporting said sliding key on the inside~~rear~~ surface of said elastic sheet.

18. (currently amended): An inputting device in accordance with claim 1 or 5, further comprising:

a concave part formed on the outside~~front~~ surface of said sliding key.

19. (currently amended): An inputting device in accordance with claim 1 or 5, further comprising:

a nonskid component disposed on the outside~~front~~ surface of said sliding key.

20. (currently amended): An inputting device in accordance with claim 1 or 5, further comprising:

one or more projections formed on the outside~~front~~ surface of said sliding key.

21. (currently amended): An inputting device in accordance with claim 1 or 5, further comprising wherein:

a plurality of openings in said cabinet surface; and

a group of keys ~~except said sliding key is also formed~~ on the front surface of said elastic sheet and each disposed in a corresponding opening of said plurality of openings in a unified state.

22. (currently amended): A mobile terminal, comprising:

~~in case that a plane being about parallel to the front surface of a cabinet of a mobile terminal is defined as an XY plane in an XY orthogonal coordinate system,~~

a cabinet surface providing having an opening part;

an elastic sheet ~~that is made of a material having elasticity and flexibility or having only elasticity and is~~ having an outside surface disposed on an inside surface of said cabinet including said opening in about parallel to said XY plane in a state that the front surface of said elastic sheet faces the rear surface of the front side of said cabinet;

a sliding key that is fixed ~~tightly on the~~ outside front surface of said elastic sheet with at least a portion in said opening of said cabinet surfaces ~~so that said sliding key is disposed at an about center of said opening part in a state that said sliding key is possible to move in an arbitrary direction on said XY plane;~~

sensors that at least detect ~~the movement in a horizontal direction that is substantially~~
parallel to said cabinet surface~~direction of said sliding key on said XY plane;~~

a displaying means that displays information; and

a first controlling means that executes first control corresponding to at least the moved
direction of said sliding key ~~in~~ on said horizontal direction~~XY plane~~as detected by said sensors.

23. (currently amended): A mobile terminal in accordance with claim 22, further
comprising:

a pushing component, which is made of a material that is harder than said elastic sheet
and whose friction factor is smaller than that of said elastic sheet, and which is disposed on the
inside~~rear~~ surface of said elastic sheet at ~~the~~a position corresponding to said sliding key;

a contact switch disposed adjacent to said pushing component that detects that said
sliding key was pushed in a vertical direction that is substantially perpendicular to the inside
~~direction of said cabinet surface by disposing at the position facing said pushing component;~~ and

a third controlling means that executes third control when said pushing component made
said contact switch work.

24. (currently amended): A mobile terminal in accordance with claim 22, wherein:

said sensors detect the movement ~~and direction~~ and the amount of the movement of said sliding key in said horizontal direction ~~on said XY plane~~, and

said first controlling means executes said first control corresponding to the moved direction and the amount of the movement of said sliding key.

25. (currently amended): A mobile terminal in accordance with claim 23, further comprising:

a control stopping means that stops said third controlling means, in case that the amount of the movement in the horizontal direction of said sliding key ~~on said XY plane~~ is larger than a ~~predetermined~~ designated value.

26. (currently amended): A mobile terminal in accordance with claim 23, further comprising:

a printed circuit board on which said contact switch is disposed; and

a sheet that covers said printed circuit board ~~and disposed~~ said contact switch.

27. (original): A mobile terminal in accordance with claim 22, wherein:

said first controlling means executes the change of the position displaying a subject to be controlled on said displaying means.

28. (original): A mobile terminal in accordance with claim 23, wherein:

said third controlling means executes the selection or the decision of information indicating by said subject to be controlled on said displaying means.

29. (currently amended): A mobile terminal in accordance with claim 22, wherein:

said sliding key has a rim part whose diameter is larger than that of said opening part,

said sliding key is adhered to said elastic sheet at said rim part, and

a space is formed on a part of the ~~insider~~rear surface of said cabinet at the position adjoining said opening part, and

~~about the edge part of~~ said rim part of said sliding key is disposed in said space.

30. (currently amended): A mobile terminal, comprising:

~~in case that a plane being about parallel to the front surface of a cabinet of a mobile terminal is defined as an XY plane in an XY orthogonal coordinate system,~~

a cabinet ~~surface providing~~having an opening part;

an elastic sheet ~~that is made of a material having elasticity and flexibility or having only elasticity and is~~ having an outside surface disposed on an inside surface of said cabinet including said opening ~~in about parallel to said XY plane in a state that the front surface of said elastic sheet faces the rear surface of the front side of said cabinet;~~

a surrounding key ~~being~~ comprising a ring shape large than said opening that is fixed tightly on ~~an inside~~ the front surface of said elastic sheet;

a sliding key that is fixed tightly on the ~~front~~ outside surface of said elastic sheet within at least a portion in said opening of said cabinet surfaces ~~so that said sliding key is disposed at an about center of said opening part in a state that said sliding key is possible to move in an arbitrary direction on said XY plane;~~

sensors that at least detect ~~the~~ movement in a horizontal moved direction substantially parallel to said cabinet surface of said sliding key on said XY plane;

a displaying means that displays information;

a first controlling means that executes a first control corresponding to at least the horizontal movement ~~direction~~ of said sliding key ~~on said XY plane detected by said sensors;~~
and

a second controlling means that executes a second control corresponding to the pushed direction of one of the edge parts of said surrounding key.

31. (currently amended): A mobile terminal in accordance with claim 30, further comprising:

a pushing component, which is made of a material that is harder than said elastic sheet and whose friction factor is smaller than that of said elastic sheet, and which is disposed on the ~~inside~~^{rear} surface of said elastic sheet at the position corresponding to said sliding key;

a contact switch disposed adjacent to said pushing component that detects that said sliding key was pushed in a vertical direction that is substantially perpendicular to said cabinet~~the inside direction of said cabinet by disposing at the position facing said pushing component~~; and

a third controlling means that executes a third control when said pushing component made said contact switch work.

32. (currently amended): A mobile terminal in accordance with claim 30, wherein:

said sensors detect ~~the~~a moved direction and the amount of ~~the~~ movement of said sliding key in the horizontal direction on said XY plane, and

said first controlling means executes said first control corresponding to the moved direction and the amount of the movement of said sliding key.

33. (currently amended): A mobile terminal in accordance with claim 31, further comprising:

a control stopping means that stops said third controlling means, in case that the amount of the horizontal movement of said sliding key ~~on said XY plane~~ is larger than a predetermined~~designated~~ value.

34. (currently amended): A mobile terminal in accordance with claim 31, further comprising:

a printed circuit board on which said contact switch is disposed; and

a sheet that covers at least a portion of said printed circuit board and~~disposed~~ said contact switch.

35. (original): A mobile terminal in accordance with claim 30, wherein:

said first controlling means and said second controlling means execute the change of the position displaying a subject to be controlled on said displaying means.

36. (original): A mobile terminal in accordance with claim 31, wherein:

said third controlling means executes the selection or the decision of information indicating by said subject to be controlled on said displaying means.

37. (original): A mobile terminal in accordance with claim 30, wherein:

said first controlling means executes the change of the position displaying a first subject to be controlled on said displaying means, and

said second controlling means executes the change of the position displaying a second subject to be controlled on said displaying means.

38. (original): A mobile terminal in accordance with claim 37, wherein:

said third controlling means executes the selection or the decision of information indicating by said first or second subject to be controlled on said displaying means.

39. (currently amended): A mobile terminal in accordance with claim 30, wherein:

said sliding key has a rim part whose diameter is larger than that of said opening ~~part~~,

said sliding key is adhered to said elastic sheet at said rim part, and

a space is formed on a part of the insider~~rear~~ surface of said openings~~surrounding key~~, and

~~about the edge part of~~ said rim part of said sliding key is disposed in said space.

40. (currently amended): A mobile terminal in accordance with claim 22 or 30, wherein:

a magnet is disposed in said sliding key, and

said sensors detect the moved direction and the amount of the movement of said sliding key in said horizontal direction~~on said XY plane~~ based on the change of the magnetic flux density from said magnet corresponding to the movement of said sliding key.

41. (currently amended): A mobile terminal in accordance with claim 40, wherein:

said sliding key provides a concave part on a part of the surface where said sliding key is adhered to said elastic sheet, and

said sliding key is adhered to said elastic sheet by disposing said magnet in said concave part, and

said magnet is sealed in said sliding key.

42. (currently amended): A mobile terminal in accordance with claim 22 or 30, wherein:

guides being possible to be recognized optically are disposed on designated positions on said elastic sheet, and

said sensors detect the moved direction and the amount of the movement of said sliding key in said horizontal direction~~on said XY plane~~ by reading the movements of said guides optically corresponding to the movement of said sliding key.

43. (currently amended): A mobile terminal in accordance with claim 22 or 30, wherein:

a coil is disposed in said sliding key, and

said sensors detect the moved direction and the amount of the movement of said sliding key in said horizontal direction~~on said XY plane~~ based on the electromotive force generated by the electromagnetic induction by the movement of said sliding key in the magnetic field of designated power formed at the surrounding part of said coil.

44. (currently amended): A mobile terminal in accordance with claim 22 or 30, further comprising:

a bellows portion having a ring shape formed in said elastic sheet outside the position where said sliding key is adhered to said elastic sheet.

45. (currently amended): A mobile terminal in accordance with claim 22 or 30, further comprising:

at least one of projections supporting said sliding key on the inside~~rear~~ surface of said elastic sheet.

46. (currently amended): A mobile terminal in accordance with claim 22 or 30, further comprising:

a concave part formed on the outside~~front~~ surface of said sliding key.

47. (currently amended): A mobile terminal in accordance with claim 22 or 30, further comprising:

a nonskid component disposed on the outside~~front~~ surface of said sliding key.

48. (currently amended): A mobile terminal in accordance with claim 22 or 30, further comprising:

one or more projections formed on the outside~~front~~ surface of said sliding key.

49. (currently amended): A mobile terminal in accordance with claim 22 or 30, further comprising~~wherein~~:

a plurality of openings in said cabinet surface; and

a group of keys ~~except said sliding key is also~~ formed on the front surface of said elastic sheet and each disposed in a corresponding opening of said plurality of openings~~in a unified state.~~